



## Designing with Nature

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THE ironic thing these days about attaining a structure that sustainably comes close to nature is you first need to be ready to spend a lot. This is because a sustainable building is built with pricy materials that most often have to be imported from many parts of the world.

But Arch. Mike Guerrero, chairman of Green Architecture Advocacy Philippines and managing partner of Asian Architects, advocates through his regular talks all over the Philippines that all the materials and resources you need to design an environment-friendly edifice are already made

available right on the land you are working on.

“All you have to do is maximize what is already there,” Guerrero said.

“For a nature-driven architect, it’s like this: When you start a design, you go first to the site, and it’s like you’re asking nature, “What are you giving me here? And from there you will begin to notice the things that are free—it could be the amazing natural light, the breeze, or anything at all—which you can maximize as you design. You don’t really need to spend a lot on expensive materials.”

“This is real green architecture, which I define simply as designing with nature, not designing against it,” he said. “Nature will always be stronger than we. We can’t fight it but we can work with it.”

With years of backpacking his way to many pristine sites in the country and with a genuine passion for architecture, Guerrero has come up with 10 simple steps to utilizing a sustainable design which he regularly shares with professional and student architects, and even everyday people who simply want to know more about sustainability.

“What we are fighting for now is to bring sustainability to everybody. Because we know that it often costs us a lot, only a few really practice sustainability. And if you seriously think about sustainability, it has to be practiced by the great majority. If not, there would be no effect,” he said.

“Green architecture should already be a standard in the future. It should not be just something special, not like a special highlight in a building, a unique trait, a bragging thing that you could say other buildings don’t have. It should be a standard,” he said.

In a nutshell, the 10 simple guidelines include keep the sun out by walls or sun-shading devices; let the light in to reduce reliance on artificial or electrical lights; catch the breeze by using wide

windows or adjust the building form to reduce further interior heat; insulate the roof through several options, like placing heat insulation below the metal roof sheet, adding spray-on insulation above the metal roof sheet, or using concrete/clay tiles; harvest rainwater to flush the toilets, water the garden and wash the car; recycle wastewater that could be treated with a traditional septic tank and an engineered reed bed; use efficient lighting like CFL and LED lights; prioritize thermal comfort by using ceiling fans and energy-efficient air conditioners; utilize renewable materials; and bank on alternative energy like photovoltaics, solar water heater, wind and hydro.

These 10 simple steps have been applied to a project in a small village in Compostela Valley, which was greatly affected by Typhoon Pablo. With the help of Holcim, the leading cement company in the Philippines, Guerrero's concept of rebuilding a devastated village into a self-sustaining one is now finding its form.

### **Partnership with Holcim**

"HOLCIM gave us an opportunity to make this goal a reality. As an advocacy group, you do everything voluntarily. So we're happy that Holcim decided to buy into the idea and said, 'let's build it.' The village is now under construction."

Guerrero said the community being redeveloped is designed to be prepared for future disasters, which means that even without access to the main town, it can still survive on its own.

"The problem in the Philippines is that when a village is cut off, it's almost as if they are done. They are so reliant on the main city that they are almost paralyzed once they lose contact."

"So in this sustainable village, the residents will have the basic necessities, like food, water and building materials. All over the village, there will be artesian wells, and we will also be planting crops that don't need much maintenance. On the periphery of the village, we're going to plant kawayan tinik, which is actually the best for construction materials. This material reduces wind speed," he said.

Guerrero said one of the unique traits of the houses is the concrete roofs made of sand and cement, which Holcim has provided. These roofs give off less heat compared with typical galvanized iron sheets.

"In the future, Holcim has plans of tying up with us once again to make another village in Tacloban. We're going to tweak our design in Compostela Valley so it can take on stronger typhoon forces. So I'm thinking already of a strong structure which can withstand very strong winds," he said.

### **Reviving the 'bayanihan' concept**

"WHAT we're also trying to do with this village is revive the bayanihan concept. We want people to go back to helping each other. That's how a community should be like. We need to understand that we don't need help from authorities all the time because sometimes, all it takes is a form of help from the people nearby," Guerrero said. "We want the residents to really be self-sufficient as a village. The construction is actually made by the village's own residents."

The sustainable village, Guerrero said, is a concept taken from the villages from previous times. "Almost all small-town villages all over the country have been adapting to modernization, and this sometimes could be harmful to the environment. What I want to do is join modernization but, at the same time, also get in touch with the natural ways practiced from way back. I'm trying to revive it in this modern society."

"This is a risk we take. Otherwise, we won't be seeing green architecture as a standard any time soon. This would be sad because it's really high time for this now," he said.

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